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[For general information on the distribution of soil types in India see 6: Spate AW1 India, category 116, pp. 80-92.]

Chapter 1

The Setting

KERALA IS THE smallest State in the whole of India.[1] It is a narrow strip of land along the western coast of India. It has an area of 14,992 square miles[2] and the coastal line is nearly 360 miles. The breadth of the State varies from 20 to 75 miles, as one moves from the extreme north to the middle. Its boundaries touch the State of Mysore in the north and that of erstwhile Madras in the east and south-east. It lies between 8°15′ and 12°45′N latitude and 74°50′ and 77°30′E longitude.

1.2 Kerala was created in 1956 at the time of the reorganization of the State through the integration of the erstwhile State of Travancore-Cochin and the Malabar district and the Kasargod taluk in South Kanara district of the erstwhile Madras State. At the same time Travancore-Cochin lost Kanyakumari, part of the Trivandrum district and Shencottah, part of the Quilon district, to Madras State. However, the net area of the State increased by about two-thirds after the reorganization of the State. Prior to the formation of Kerala as a separate State, Travancore-Cochin was administratively divided into four districts, while Malabar was a single district. At the time of integration, Malabar was broken up into three districts. Subsequently, during 1957 two new districts, viz., Alleppey and Ernakulam were carved out of the territory belonging to Trichur, Kottayam and Quilon. The State, therefore, now comprises nine districts. The total length of the State from its northern extremity to the southern tip is about 360 miles. But its width is nowhere more than 75 miles.

PHYSICAL FEATURES

1.3 The State territory may be broadly classified into three natural sub-divisions, the highland, the midland and the lowland. Western Ghats which range along the eastern border of the State form the highland. This is mostly a mountainous and rocky terrain ranging in height from 3,000 ft. to 8,000 ft. Anamudi, the highest peak of the Western Ghats (8,837 ft.) is located in the Kottayam district. The highland is thickly forested in its upper ranges, while in the lower ranges the forests are interspersed with plantations.

1.4 On the western fringe of the State are the lowlands which stretch along the coastal plain. Coconut palms, which cover most of this area, lend a richness to the landscape of the region. The soil in this plain is sandy. Coir-making and fishing are the two main occupations. Sandwiched between the lowland and the highland

[1] Excluding the Union Territories.
[2] *Statistical Outline of Kerala State*, Department of Statistics, Government of Kerala.

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crops is about 8 per cent of the gross cropped area. A direct consequence of this type of cropping pattern is the high degree of commercialization which has been attained in the agricultural sector. This has important implications for the State economy. The State exports its commercial crops, and imports its foodgrain requirements. In this exchange the State stands to gain since cash crops yield far higher return per unit of area than the food crops. Secondly, quite a few of the commercial crops grown in the State are of a perennial nature and require large investments. This has led to the establishment of numerous large scale organized plantations and farms, although small farms also play an important role.

2.6 A chronic food deficit is the third important feature of the agricultural sector, mentioned above (para 2.1). The current production of foodgrains is roughly 967,000 tons. Current requirements on the basis of a norm of 17 ozs.[1] of foodgrains per day per adult (unit) work out to a figure of 24 lakh tons. The gap between food requirements and the current level of production thus works out to over 50 per cent of total requirements. This is higher than in any other State. However, this need not cause excessive anxiety. It is not necessary for every State in the Union to try and achieve self-sufficiency in food at the cost of other more valuable commercial crops. From the long run point of view, the aim should be to strike a balance between supply and demand for foodgrains at the national, rather than, strictly, at the level of the State. The psychological desire to attain a balance between local supply and demand for foodgrains in the State is a legacy of the lean period of 1940–50 when the State was hard hit by the severe food shortage prevailing in the country.

Climate and Geographical Factors

2.7 The climate and rainfall in Kerala are excellently suited to the prevailing cropping pattern. The climate is cool and humid in the high ranges while it is humid and warm in the plains. The range of temperature variations during the year is very small, the maximum never going beyond 90°F and minimum rarely below 75°F. The humidity, however, is very high in the rainy season—about 90 per cent. The State is fortunate in respect of rainfall. The normal annual rainfall is 95 inches a year ; it may be as high as 150 inches in the high ranges, but nowhere it is less than 65 inches. Most of the precipitation occurs during May to September when the State receives the south-west monsoon. Taking the State as a whole, it may be said that it is one of the most wet areas in the country (Table 1).[2] Assam has about the same normal rainfall as Kerala. Only the Konkan coast (Bombay) and South Kanara (Mysore) exceed it. The annual deviation in rainfall is also comparatively low with the co-efficient of mean deviation at 6.5 per cent for Travancore-Cochin and 9.2 per cent for Malabar (Table 1). On the whole rains are more reliable in Kerala than in most other States.

2.8 Kerala has two distinct geographical divisions, namely, the Travancore-Cochin and the Malabar area. The soils of Travancore-Cochin area are generally

[1] The Nutritional Advisory Committee to the Government of India recommended 18 ozs. of foodgrains per adult unit per day as the desirable norm. We have used a slightly smaller figure (17 ozs. per day) in our calculations.

[2] [Table, appearing on p. 269 of the text, has not been processed – Compiler]

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

134 formed of gneissic debris by sub-aerial decomposition. The formation of coastal areas consists mostly of sands deposited by the sea. The soils are generally of poor fertility status. Some peculiar formations are found in the taluks of Ambalapuzha, 135 Kuttanad, Vaikom and Shertallai and go by the name *peaty* or Kari soils. These are black and heavy and contain plenty of potash and 10 to 30 per cent organic matter. However, the soils are highly acidic due to the decomposition of organic matter under anaerobic conditions, presence of iron and aluminium salts and absence of 242 nitrification. Attempts to reclaim the soils by liming and improvement of drainage have so far proved unsuccessful. In Trichur and Mukundapuram taluks there is yet another category known as *Kole* soils. These are fertile alluvial soils. The soils of Malabar area are quite different. They are mostly red soils formed *in situ* from the micaccons or granitic rocks below under the influence of weather and climatic conditions. The fertility of the red soil is poor. They contain very low proportions of organic matter and nitrogen. But these soils contain ferrous and aluminium ions in fairly large proportions and in the absence of humous this situation results in reversion of phosphate—a state where phosphorous when applied in the form of fertilizers, does not become readily assimilable by the plants.

Land Utilization

311 2.9 The fact that Kerala has drawn upon the margin of cultivable land much more than in the rest of India is borne out clearly by Table 8.2 The net sown area in the State during 1956-57 was 4,525,000 acres, that is 47.16 per cent of the total area. This is about 8 per cent more than corresponding all-India proportion (39.1%). The proportion of fallow lands in Kerala is also very low. (Kerala 4.4%: all-India 7.5%). A higher proportion of total area devoted to cultivation becomes all the more significant in view of the fact that forests cover about 26 per cent of the total area of the State compared to the all-India average of 17.44 per cent.

2.10 During the period 1951–57, there has been an overall improvement in the pattern of land utilization in the State. There have been significant increases in the area under forests (15.8%), permanent pastures (19.8%), land under tree crops (18.1%), net area sown (29.8%), and the area sown more than once (24.9%). These increases were mostly at the expense of cultivable waste, which declined by about 40 per cent during the period. The next important decline (16.7%) was in the barren and uncultivable lands. The area sown more than once rose by about 25 per cent, but this was partly offset by an increase of 35 per cent in the area under current fallows. (Table 8).2

2.11 Another notable feature of the agricultural sector in Kerala is the high intensity of cropping.[1] During 1956-57, the gross sown area was 5.6 million acres and the net sown area was 4.7 million acres. This works out to a crop intensity of 119 per cent (all-India 113%; Punjab 130%; Maharashtra 120%). However, if the field crops alone are taken into account, crop intensity works out to as high a figure as 150 per cent. It is the latter percentage which gives a more accurate idea of the

[Text continues on p. 25]

[1] Intensity of cropping is the ratio between gross cropped and net cropped area.

2 [See p. 274, category 116 -- Analyst]

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

improved seeds would, therefore, be much larger in Kerala than elsewhere in the country. For full coverage of the area by improved seeds, it is estimated that by 1971, 120 new farms would have to be organized. Investment on each of these farms, including a seed store, would be about Rs. 75,000. Total investment on additional seed farms would, therefore, amount to about Rs. 90 lakhs. Assuming an increase of 10 per cent in yield, additional production due to full coverage from improved seeds by the end of the Fourth Plan would be about 75,000 tons of foodgrains alone. Similar increases may be achieved for other agricultural commodities also.

Manures and Fertilizers

2.42 The soils of Kerala are not fertile. Being of lateritic origin they are highly porous. More than 50 per cent of the cultivated soils contain less than 15 per cent of clay complex. Continuous cropping accompanied by heavy leaching (a direct consequence of heavy rainfall) has made the soils extremely deficient in phosphates, nitrogen and potash, and also in calcium, magnesium and other minor elements.

2.43 Inspite of the poor fertility of soils, the crop yields are good. This is primarily due to the application of a large amount of organic manures to the fields. In addition to organic manures, the farmers also use fertilizers. Farmers of Kerala were among the first to realize benefits of fertilizers and put them to use. But the quantity used is small owing to inadequate supplies. Even a modest consumption target of 14,200 tons of fertilizers[1] per annum for the Second Plan had to be revised to 5,800 tons on account of this shortage. During 1958-59, the State consumed 5,000 tons of nitrogenous ferilizers mostly in the form of ammonium sulphate and potassic fertilizers. This works out to roughly 1.2 lbs. per acre of nitrogen and less than 0.1 lb. per acre of phosphate and potash.

2.44 In future, the emphasis should be placed both on manures and on fertilizers. Organic manures, in addition to providing the plant nutrition, help in conditioning the soil, whereas fertilizers are necessary for supplementing nutritional needs which the organic manures are not able to provide fully. A joint and balanced application of organic manures and fertilizers is, therefore, necessary for getting the desired results.

2.45 All possible sources in the State should be fully exploited for increasing the supply of organic manures. There is scope for greater utilization of urban wastes and green leaves. There is also scope for fuller utilization of the existing production of press mud and for increasing the supply of green matter by raising green manure plants on the borders of fields and banks of river streams. The supply of organic manures may be further augmented by fuller utilization of fish waste and inedible or spoilt fish. Such possibilities should be investigated.

2.46 As emphasized above, a desired level of crop nutrition will not be possible unless manures are adequately supplemented by fertilizers. The supplementary dosage of fertilizers differs from crop to crop depending upon the nature of the crop, length of the growing period and the yield rates. The dosage is the highest for banana, with NPK (Nitrogen, Phosphorous and Potash) ratio at 150 : 150 : 300 lbs.

[1] 9,680 tons of N, 3,720 tons of P_2O_5 and 840 tons of K.

11: India G-4, 5 (1960-1961) 1962 AWll Kerala AWll

of paddy. This would not only give additional production of pulses which are deficit in the State, but also enrich the soil by leaving a nitrogen residue, and thereby constitute a better rotation. It may be possible to develop pulse crops on 250,000 acres. Assuming an yield of a quarter ton per acre, the additional production of pulses by crop intensification, as suggested here, would be roughly 62,500 tons per year.

2.74 Better plant protection is another measure for getting a substantial increase in yields. It is estimated that yields increase approximately by about 10 per cent through this method. The Department of Agriculture should tackle this problem more effectively. This would only be possible by strengthening the Plant Protection Wing of the Department of Agriculture.

Implements

2.75 Agricultural implements in use in the State are antiquated and inefficient. The wooden plough continues to be the master implement and is used for tillage operations of almost all the crops. Iron ploughs and other tillage implements are not popular. In fact the number of iron ploughs decreased by 22 per cent during 1951–56 and at present stands at 10,225. Tractors during the same period, however, increased from 59 to 187. Irrigation pumps too have shown an increase of 116 per cent.

2.76 The slow adoption of improved implements is mostly due to non-availability of implements and machinery suited to local conditions as well as due to their high cost. The topographical conditions and techniques of cultivation are unique in Kerala and there are no implements designed and developed to suit such conditions. There is, therefore, need for developing efficient implements for rice cultivation, plantation crops, soil conservation work and also for specialized implements such as ridgers and earthers for ginger and tapioca. It would be necessary to have a well equipped and adequately staffed agricultural engineering station to undertake the type of work suggested here. The proposed station may also do some work in designing of irrigation aids and may advise farmers on the selection of pumping sets and cane crushers.

Soil Erosion

2.77 Soil erosion is a serious problem in Kerala. Conditions prevalent in the State such as lateritic soils, undulating to steep topography, the system of farming followed and heavy cloud burst—all these constitute towards excessive soil erosion. There is no reliable estimate regarding the extent of area affected or vulnerable to soil erosion, but it is estimated that about one-third of the cultivated area—approximately 1.5 to 2 million acres—is affected by it. It should be possible to protect at least one million acres through soil conservation measures by 1971.

2.78 Soil conservation work as carried out by the Department of Agriculture has become very popular with the farmers. The Department gives technical advice on soil conservation matters and undertakes operations in specified areas in water-shed units.

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134 185 [464] units. Actual cost is borne by the beneficiaries because the State recovers it by easy instalments. The average cost of soil conservation is Rs. 150 per acre. The total cost of conserving one million acres at an average rate of Rs. 150 per acre would be Rs. 1.5 crores per year assuming that the programme is evenly phased. Soil conservation work is also very labour intensive and the proposed programme would give continuous employment to about 17,500 persons over the next 10-year period.

Related Aspects

*433 449 2.79 For full effectiveness, the development programme for agriculture, as suggested above, would need a larger extension organization than that which was set up in 1953. It is expected to cover the whole of the State by the middle of the Third Plan period. The extension work at present is not intensive enough. The number of extension workers is too few to be really effective; the staff capacity needs to be augmented. In this connection the Agriculture Personnel Committee has recommended that the work in charge of a village level worker should be reduced by half. The Committee has also made suggestions on other aspects such as training and education, etc., of extension workers. The State Government may examine these proposals with a view to implementation as early as possible.

Marketing

*433 442 438 [656] 2.80 The small cultivators generally experience great difficulty in disposing of their produce at reasonable prices. In case of some commodities like ginger, pepper and arecanut, the difference between the price received by producers and that paid by consumers is as high as 100 per cent. In addition, none of the commodities except lemon grass is properly graded and this leads to serious consequences from the point of view of export markets. Marketing, processing and grading facilities should be developed so that both the producers as well as the consumers are benefited. In this context, as recommended by the Directorate of Marketing and Inspection, all the 41 wholesale markets in the State should be regulated. At present only four are regulated.

Agricultural Credit

*433 452 2.81 The average level of earning of farmers being rather low, most of them require credit facilities for making improvements in their land. According to a survey, conducted in 1960 by the Bureau of Economic Studies, 89 per cent of the farmers need credit of some type. It also reveals that 82 per cent of the farmers need short term credit while medium and long term credit are needed by 56 and 34 per cent of farmers respectively. On the basis of the findings of the survey, the annual agricultural credit needs for the whole State may be put at 32.8 crores, of which Rs. 18.67 crores would be in the nature of short term credit, Rs. 6.74 crores medium term credit and Rs. 6.5 crores long term credit. The garden crops would account for Rs. 21.6 crores and paddy Rs. 11.2 crores.

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

But much of this increase is the consequence of a greater diversification in agricultural activities with a view to reducing unemployment and under-employment among family labour and raising the family income. Poultry-keeping has, of late, become very popular with the rural families and it is unusual to find families in the rural areas which do not rear at least a few laying birds. Kerala produced 137 million eggs (hen eggs—114 million; duck eggs—23 million) in 1951, and ranked fifth among the States in egg production. Production of eggs is now much higher and may be around 200 million. Kerala is also the biggest exporter of eggs. These are sent as far as Punjab in the north, Calcutta in the east and Bombay in the west and even to foreign countries, mainly Ceylon.

Low Productivity of Livestock

3.5 On an average a cow yields 330 lbs. of milk per year, a buffalo 619 lbs. and a goat 40 lbs. These yield rates compare very unfavourably with those for other parts of India (Table 16).* The low productivity of animals is partly due to the poor inherent breed characteristics and partly due to the conditions under which they are reared. The cattle found in Kerala are all of a non-descript type. They are small in size and build. They are stunted in growth. Buffalo in Kerala weighs about half of its counterpart in U.P. or Punjab. The same is true of other livestock too.

3.6 The livestock, especially the bovines, are reared under unwholesome conditions. They are under-fed. The bulk of the ration consists of roughages, mostly rice straw, and is grossly deficient in proteins and other protective properties. The livestock feed available in Kerala is also highly deficient in some of the important bone-building minerals such as calcium and phosphates. This is a direct consequence of a high rainfall which has leached off most of these minerals from the root zones of soils. In the absence of adequate phosphatic and calcium soil amendments, the crops grown in such soils are poor in these minerals. Lack of minerals has a telling effect on the health, build and general condition of the livestock of Kerala. The small size and build are important causes responsible for their low milk yield and poor work output.

3.7 Nutritional deficiencies lead to a number of serious consequences. Poor health results in low vitality and resistance to diseases as well as a low rate of nutritional utilization from feeds. All these factors are responsible for a low level of efficiency and other hazards such as a high rate of mortality and a low rate of fertility. However, realizing the reasons for low productivity, many enlightened farmers have taken to scientific rearing of livestock and have started adding concentrates, such as waste grains, oil cakes and mineral mixtures to the cattle feed. Credit for this goes to the State's Animal Husbandry Department which has been making special efforts to educate the peasantry on the need for adding mineral mixtures to the livestock feed. The Department has been distributing mineral mixtures to farmers at subsidized rates in order to popularize them.

3.8 In view of the very poor quality of livestock in the State there is an urgent need for developing animal husbandry in Kerala. Although animal husbandry

* [Table 16, appearing on p. 282 of the text, has not been processed -- Analyst]

12:Peter E-5 (1939, 1949) 1963 AWll Kerala AWll

Ghats, the height of which varies between five and over eight thousand feet.

Before 1957, when the new State of Kerala came into being with the reorganization of the Indian States, the area included the large Madras district of Malabar, the French possession of Mahe, and the princely State of Cochin amalgamated with that of Travancore. The respective capitals were Calicut (today Kozhikode), Ernakulam, and Trivandrum, the French possession being limited to the town bearing the same name as itself.

All rivers in Kerala, except those of the more elevated taluk of the Wynaad, run from east to west, cutting the coastal strip into sections. Inland, however, vast stretches of practically stagnant water, comparable to lagoons, known locally under the name of backwaters, extend down the whole length of the State, affording uninterrupted communication.

Geologically, Kerala is a low tableland of red laterite and clay, fringed by a coast of alluvial formation. Laterite, from the name given to it by Dr Buchanan in 1800, is really a soil of decomposed gneiss, from which the Western Ghats are made. When dug up and left to the action of sun and rain, only the skeleton of hard material remains, sponge-like in appearance, from which blocks of building material are cut. It is not very resistant or long-lived, and gradually disintegrates into a red type of gravel, more or less finely granulated.

The resultant soil or loam is a well-balanced mixture of clay and sand, admittedly poor in organic matter, but well-suited to the special types of crops which have given Kerala its wealth. Thus rice, coconuts, pepper and betel, arecanuts, jack fruits, mangoes and cashews, do extraordinarily well in it, helped as they are by the damp, warm climate constant throughout the year. There are two monsoons in Kerala, the south-west monsoon of the summer, which is the principal one, and the north-west monsoon of the autumn which, lately, often fails.

In appearance, the landscape of Kerala varies very little from the coastal line to the towering peaks of the Western Ghats. Along the beach of fine sand, coconut trees in an unending perspective, raise their gently waving palm leaves in a manner reminiscent of the South Seas and of Ceylon. Jack fruit trees and mangoes behind them, being of a darker coloured foliage, give depth to the romantic scene. It is among these that the houses of the inhabitants of Kerala are to be found. Unlike the rest of India, human habitations are not grouped together here in villages and towns. Each stands isolated from its neighbours, in a garden-like compound surrounded by a stout fence of brambles or of

31: Slater S-5 (1916-1917) 1918 AWI India
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241
463 toddy and jaggery and three carters who are mainly agriculturists.

651 The revenue for the year 1915-16 was Rs. 3,175-10-3. The assessment for fasli 1312 for the Amsam of Kothachira was Rs. 6,519-2-4. By settlement (fasli 1326) it is Rs. 11,228-7-0.

241 *Agriculture.*—We have mentioned elsewhere the names of the chief crops. Out of these, the two staple products are paddy and arecanut, the former being a field cultivation and the latter garden. The mainstay of the bulk of the population is arecanut. Every household of any worth is surrounded by an areca palm garden.

The method of cultivation pursued in both these is of an antiquated character.

245 1. *Arecanut.*—Mature fruits are selected for seeds. They are kept in pots and watered for one year. Next year they are planted and within a year and a half or so, they grow into young plants Then they are transplanted into the gardens where they have to be grown. They are planted in parallel lines, the distance from one another varying from two to three yards. The plants are at first placed in pits measuring a cubic yard. Some cow dung and ash manure are put, and a watering is given on alternate days in the summer. During the monsoon they are left to themselves. When the plants grow up into trees, the pit is filled up and a shallow basin round it made just to contain a few gallons of water. These are renewed every year in the beginning of summer, small channels are cut across the gardens to bring water to the root of every tree, water-lifts are erected and regular watering begun. This will continue until the advent of the monsoon.

243 2. *Paddy.*—On the first shower of the monsoon, fields are given a hasty ploughing and seeds are thrown. A fortnight of average showers helps healthy sprouting and the ryot prays for similar weather for another two fortnights to come. By this time, they have grown up into healthy plants. Between the second and third month of their growth, they are carefully unrooted and planted in plots prepared by ploughing for the purpose. Between the fifth and sixth month after sowing comes the harvest. If there is a second crop, the land is again prepared for sowing immediately after harvest and the whole process repeated. For this crop, the ryot depends on the north-east monsoon which gives two months of heavy rain from the middle of November to the middle of January. After this harvest the fields lie fallow for a period of two or three months.

651 A table given in the next page will show the areas under single
134 and double crop, different soils, and the nature of the assessments
311 on each. (The information is taken from the village accounts.) The assessment given herein is the revised one after the re-settlement.

Description of soil.	Wet.						Garden.					Occupied dry.				
	Taram.	Whether single or double crop.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.	Taram.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.	Taram.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
			RS. A.	ACS. C.	RS. A.			RS. A.	ACS. C.	RS. A.			RS. A.	ACS. C.	RS. A.	
Red loam, VII-1 ...	...	...	...	...	...	...	2	6 0	1 49	8 15	...	2	1 8	1 10	1 11	...
	...	...	...	...	...	...	3	5 0	4 24	21 3	...	...	...	...	...	...
VII-2 ...	2	1	5 0	8 97	44 14	...	3	5 0	0 75	3 12	...	3	1 0	52 46	52 10	...
	...	2	6 4	205 46	1,284 2	...	4	4 0	24 95	99 13	...	...	...	...	...	...
	...	...	...	...	.	...	5	3 0	33 18	99 8	...	...	...	...	...	...
	...	...	...	...	...	...	6	2 0	73 71	147 5	...	...	...	...	...	...
	...	...	...	...	...	...	7	1 0	13 75	13 12	...	...	...	...	...	...
VII-3 ...	3	1	4 0	33 76	135 1	...	5	3 0	15 67	46 14	...	4	0 12	11 394	85 7	...
	...	2	5 0	95 82	479 3	...	6	2 0	18 28	36 9	...	...	...	...	...	...
	...	...	...	...	...	...	7	1 0	21 56	21 9	...	...	...	...	...	...
VII-4 ...	4	1	3 0	50 60	151 15	...	6	2 0	0 60	1 6	...	5	0 10	89 50	12 3	...
	...	2	3 12	10 57	39 10	...	7	1 0	0 80	0 13	...	...	...	...	...	...
VII-5 ...	5	1	2 0	33 29	66 12	...	...	...	...	...	...	6	0 8	2 62	1 5	...
	...	2	2 8	0 59	1 8	...	...	..	...	...	...	...	...	...	...	...
Red sand, VIII-3	4	2	3 12	6 21	23 4	...	7	1 0	0 55	0 9	...	5	0 10	6 28	4 0	...
VIII-4	...	...	...	...	...	..	...	..	...	...	...	6	0 8	1 26	0 10	...
Total ...	...	...	...	445 27	2,226 5	...	...	...	209 43	502 0	...	...	...	197 16	157 14	...

31: Slater S-5 (1916-1917) 1918 AWI India
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